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ABSTRACT

The way that medical students used objectives throughout the curriculum and factors that influenced their level of use was studied at Southern Illinois University School of Medicine, a three-year medical school with an entirely objectives-based curriculum. A questionnaire mailed to 75 students yielded a 75 percent return. The predominant modes for using objectives were to read them prior to studying texts, to share written answers to objectives with a study group, and to self-test after studying. The main findings, which replicated those of a previous study, are as follows: steadily decreasing usefulness of objectives from the basic science to the clinical years, greater use of objectives in times of frequent testing and when students expected objectives to be tested, greater use of objectives that are easy to use, a small percentage of students feeling inhibited by objectives, and student use of objectives to meet the demands of the evaluation system. The primary motive for students to use objectives appears to be to increase the efficiency of their study time. It is suggested that at least three important factors influence the congruency among objectives, teaching, and evaluation: the number of faculty involved in teaching (generally greater in clinical departments), the cohesiveness of faculty (generally less for clinical associates and residents), and the subjectivity of the student evaluation system (generally greater in clinical departments). It is concluded that stated objectives will be most valuable to medical students in the basic science portions of the curriculum because it is easier to achieve congruency between objectives and evaluation there. (SW)

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# Reported Use of Objectives by Medical Students

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This study examined how medical students used objectives throughout the curriculum, and what influenced their level of use. A questionnaire mailed to 75 students yielded a 75% return. The predominant modes for using objectives were to read them prior to studying texts, to share written answers to objectives with a study group, and to self-test after studying. Students considered objectives essential early in the curriculum, gradually decreasing in usefulness, and of little use in clinical years. The findings were related to the congruency between objectives and evaluation. Recommendations were made for maximizing the effects of objectives on student study behavior.

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Reported Use of Objectives by Medical Students

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Although the effects of objectives on student learning may result as much from their indirect effects on faculty and administration as their direct effects on students, research on instructional objectives has focused on the effects of objectives on student learning, retention, and attitudes.[1-3] Such research has been performed using relatively short instructional units (several minutes to one semester) and has assumed that students use the objectives provided in the manner intended. One previous study examined whether students actually use the provided objectives, how they use them, and whether they continue to use objectives extensively in the basic science years, less in the clerkship years, and not at all during electives. Three factors which were reported to increase students use of objectives were the frequency of testing and student expectations that objectives would be tested, time pressure, and the ease of use of the objectives. The purposes of the present research were to replicate the prior findings, to further explore the manner in which students used objectives, and to examine their reasons for using objectives less as the curriculum progressed.

## METHOD

The study was conducted in the Southern Illinois University School of Medicine,[5] a three-year medical school with an entirely objectives-based curriculum. A questionnaire employing selected items was mailed to the 75 students in the SIU Class of 1979 during their final month of medical school. Many of the questions were duplicated verbatim from the questionnaire used in the previous research.[4] New questions focused specifically on how students used objectives in each portion of the curriculum and why they used them less in later years in the curriculum.

RESULTS

Questionnaire mailings yielded a 75% response rate. When asked how useful objectives were in each sequence in the curriculum, students' mean responses were 4.46 in Sequence I*, 3.84 in Sequence II +, and 3.43 in Sequence III # (on a scale where 1 meant Detrimental, 2 meant No Effect, and 5 meant Essential). No students found objectives detrimental in Sequences I and II.

Student responses describing how they used objectives also showed greatest use in Sequence I, where the predominant modes for using objectives were to read objectives before studying resource material ($\bar{x}$ = 4.21 on a scale of 1 = Never to 5 - Always), to write answers to some objectives for sharing with a study group ($\bar{x}$ = 4.21), and two self-test with objectives after reading resource material ($\bar{x}$ = 3.77). Student use of objectives in all categories except one diminished in Sequence II and diminished still further in Sequence III. The exception was that students reported a growing tendency to formulate their own objectives from Sequence I ($\bar{x}$ = 2.27) to Sequence III ($\bar{x}$ = 3.31).

The main factors tending to increase student use of objectives were an expectation that objectives would be tested ($\bar{x}$ = 4.41 on a scale of 1 = Decreased to 5 = Increased), having objectives that were clear and concise ($\bar{x}$ = 4.38), frequent testing ($\bar{x}$ = 4.34), and having objectives that matched the material well ($\bar{x}$ = 3.23).

When asked to rate the importance of various reasons for the decrease in objectives usage, 68% of the students rated as a "very important" reason that objectives were not generally tested in Sequence III and 63% that Sequence III faculty minimized the importance of objectives. Of little importance in causing the shift were differences in the direction provided by the textbooks in the three sequeces or the obviousness of objectives for modules in each sequence.

*Sequence I is the initial year of medical school, 12 months of basic sciences.
+Sequence II is six months of pre-clinical sciences.
#Sequence III is 12 months of clinical clerkships.

Students reported that testing was most consistent with objectives in Sequence I ($\bar{x}$ = 3.85 on a scale of 1 to 5), less so in Sequence II ($\bar{x}$ = 3.21), and not at all consistent with objectives in Sequence III ($\bar{x}$ = 1.19). They perceived objectives as helping more in learning factual material ($\bar{x}$ = 3.96) than in conceptual learning ($\bar{x}$ = 3.18) or integration ($\bar{x}$ = 3.37). The greatest agreement reported was the objectives promoted efficient use of study time ($\bar{x}$ = 4.20). Last, 78% of the students did not feel that their learning was inhibited by the presence of objectives, while 22% did feel inhibited.

DISCUSSION

The main findings of the previous study[4] are all replicated in the present investigation: (1) steadily decreasing usefulness of objectives from the basic science to the clinical years, (2) greater use of objectives in times of frequent testing and when students expected objectives to be tested, (3) greater use of objectives that are easy to use, and (4) a small percentage of students feeling inhibited by objectives. The additional data in the present study overwhelmingly support the explanation that students use objectives to meet the demands of the evaluation system.

The primary motive for students to use objectives appears to be to increase the efficiency of their study time. Given the universal competition for time in medical school curricula, the need for efficient study is great. Students are evaluated in Sequences I and II primarily on the basis of their scores on written examinations. Student reports that evaluations were less consistent with objectives in Sequence II then explains less use of objectives in Sequence II.

In Sequence III, evaluation shifts to much more subjective clinical evaluation forms completed by faculty and residents. Again, a perceived decrease in congruency between objectives and the evaluation system explains the decrease in use of objectives. This drop in Sequence III is further explained by the report that faculty minimized the importance of goals in Sequence III. If a discrepancy occurs between what faculty express directly to students as desired behavior in

Sequence III and what they express indirectly through stated objectives, students stop attending to objectives.

This analysis would suggest that objectives are not intrinsically less useful in clinical than in basic instruction. Indeed because of the greater variability among student experiences in clinical instruction, the authors would argue that objectives which help students identify the critical core of skills to be acquired would be even more useful in clinical instruction. At least three important factors influence the congruency among objectives, teaching, and evaluation: (1) the number of faculty involved in teaching - generally greater in clinical departments, (2) the cohesiveness of faculty - generally less when clinical associates and residents are involved, and (3) the subjectivity of the student evaluation system - generally greater in clinical departments.

The authors conclude that stated objectives will be most valuable to medical students in the basic science portions of the curriculum because it is easier to achieve congruency between objectives and evaluation there. Efforts to obtain departmental agreement on and commitment to objectives, such as the one recently reported in prediatrics [6], and further to translate this agreement to the evaluation system. will be required before stated objectives will have a substantial effect on student behavior in clinical instruction.

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